Third Grade Technology: Computer Science and Design Thinking Curriculum 2022

Pacing Guide	Standard Code & Indicator	Sample Learning Activities	Assessment	Additional Standards

August-October Orientation Review of basics Google Training	8.1.5.CS.1: Model how computing devices connect to other components to form a system. 8.1.5.CS.2: Model how computer software and hardware work together as a system to accomplish tasks. 8.1.5.CS.3: Identify potential solutions for simple hardware and software problems using common troubleshooting strategies. 8.1.5.DA.2: Compare the amount of storage space required for different types of data.	-Get orientation of Google classroom, docs and slides -Demonstrate mastery of Google classroom, docs, and slides -Insert information into a digital graphic organizer -Apply typing skills to respond to prompts on Google Docs -Insert texts, pictures or clipart, change font into a Google Slide, how to edit, copy and paste texts and pictures. -Execute word processing activities successfully -Learn how to send and share google docs, slides, etc -Learn about storage space based on different Google assignments that are saved in students' drives. -Typing practice to learn proper hand position on keyboard **Instructional Resources:** Gsuite training Grow with Google https://www.typing.com/student/lessons	**Formative Assessments:** Classwork Student Participation Teacher Observation **Summative Assessments:** Google doc- All about my summer (and submission) Google Slides- All about me **Benchmark Assessment:** BOY Benchmark Accommodations and Modifications	**Interdisciplinary Standard:** W 3.3 Students will write an narrative essay on their summer

October- November Copyright and Cyber safety	8.1.5.NI.2: Describe physical and digital security measures for protecting sensitive personal information. 8.1.5.NI.1: Develop models that successfully transmit and receive information using both wired and wireless methods.	-Vocabulary: cyber safety, shareware, wifi, internet, social media, digital citizenship, freeware, pirating, downloading, illegal, copying, ethics, morals, legal -Compare and contrast wired vs wireless connections to send information -Explore cyber safety -Discuss various security measures such as passwords, fingerprints, etc. -Explore copyright laws -What is a citation? -Learn how to create a citation **Instructional Resources:** Gsuite training Grow with Google **Teacher Technology:** Computer Activ Panel Acitiv View YouTube Videos BrainPop Jr. GSuite Copyright **Student Technology:**	**Formative Assessments:** Classwork Student Participation Teacher Observation **Summative Assessments:** Google doc- Internet Safety (and submission) Citing a source Accommodations and Modifications	**Interdisciplinary Standard 2.1.4.D.1** When on the internet, students are taught to practice safe behaviors and conduct themselves as positive digital citizens.

November-January Coding	8.1.5.AP.2: Create programs that use clearly named variables to store and modify data. 8.1.5.AP.3: Create programs that include sequences, events, loops, and conditionals. 8.1.5.AP.4: Break down problems into smaller, manageable sub-problems to facilitate program development.	-Introduction to what coding means -Develop understanding of how computers work through code -Students will use code.org unit to learn application and development of codes -Develop a sequence and debug mistakes -Apply understanding to debug an algorithm -Create a loop -Apply coding strategizing and looping **Instructional Resources:** ● Code.org ● Tynker ● familycodenight.org ● snap ● scratch **Student Technology:** ● Google ● Promethean Board ● Internet ● code.org **Teacher Technology:** ● Google	**Formative Assessments:** Classwork Student Participation Teacher Observation **Summative Assessments:** Coding Challenge Accommodations and Modifications	**Interdisciplinary Standard: L 3.1** Coding, like any other language requires students to communicate with directions (the code) that the program will understand.

February-March Robots	8.2.5.ED.2: Collaborate with peers to collect information, brainstorm to solve a problem, and evaluate all possible solutions to provide the best results with supporting sketches or models. 8.2.5.ED.3: Follow step by step directions to assemble a product or solve a problem, using appropriate tools to accomplish the task.	-Develop an understanding of how robots work through coding -Use LEGO WEDO to build a functioning robot vehicle through code (Google Chrome App: LEGO® Education WeDo 2.0 App) **Instructional Resources:** Lego education- Wedo **Teacher Technology:** Computer Activ Panel Acitiv View YouTube Videos BrainPop Jr. **Student Technology:** Computer; iPads Google Classroom Robots	**Formative Assessments:** Classwork Student Participation Teacher Observation **Summative Assessments:** Coding the robot to do an action Motorization of robot Accommodations and Modifications	**Interdisciplinary Standard:Math 3.MD.C.6** When working with robots, students will measure robot distance.

April-June Recycling: Effects of Technology on the Natural World	8.2.5.ETW.2: Describe ways that various technologies are used to reduce improper use of resources. 8.2.5.ETW.3: Explain why human-designed systems, products, and environments need to be constantly monitored, maintained, and improved. 8.2.5.ETW.5: Identify the impact of a specific technology on the environment and determine what can be done to increase positive effects and to reduce any negative effects, such as climate change. 9.4.5.CT.1: Identify and gather relevant data that will aid in the problem-solving process. 9.4.5.CT.4: Apply critical thinking and problem-solving strategies to different types of problems such as personal, academic, community and global. 9.4.5.IML.2: Create a visual representation to organize information about a problem or issue. 9.4.5.IML.3: Represent the same data in multiple visual formats in order to tell a story about the data. 9.4.5.IML.6: Use appropriate sources of information from diverse sources, contexts, disciplines, and cultures to	-Research and explore the global issue of waste disposal -Investigate ways that various technologies are being developed to recycling protocol -Through research, determine possible solutions through recycling -Determine ways technology has impacted recycling procedures -Collaborate with peers to produce and publish a report using Slides detailing the effect of technology on waste disposal -Group Presentation **Instructional Resources:** Bill Nye video- Garbage **Teacher Technology:** Computer Activ Panel Acitiv View YouTube Videos BrainPop Jr. **Student Technology:** Computer; iPads Google Classroom	**Formative Assessments:** Classwork Student Participation Teacher Observation **Summative Assessments:** Google slides- waste disposal project **Benchmark Assessment:** EOY Benchmark Accommodations and Modifications	**Interdisciplinary Standard:** 3-5-ETS1-3: Generate and compare multiple possible solutions to a problem.

Alternate Assessments: Coding Blog; Coding a Robot, Worksheets/Activities
21st Century Standards: 9.1.4.A.2, 9.2.4.A.1 and 9.2.4.A.2
21st Century Skills: Media literacy, Technology literacy, Flexibility and Leadership
Career Ready Practice: CRP6, CRP 7 and CRP 8